

## **SECTION 16195**

### **ELECTRICAL IDENTIFICATION**

#### **PART I - GENERAL**

##### **1.1 DESCRIPTION OF WORK**

- A.** Work Included: This Section specifies the furnishing and installing of nameplates and labels, wire and cable markers, and conduit markers. Engraved nameplates shall be designed, furnished and installed for every major piece of electrical equipment shown on the single-line diagrams. The single-line diagrams are shown on the Contract drawings.
- B.** Related requirements are included in, but not limited to, the following Sections.
1. Section 09900: PAINTING
  2. Section 16010: GENERAL ELECTRICAL REQUIREMENTS
  3. Section 16050: BASIC MATERIALS AND METHODS FOR ELECTRICAL WORK

##### **1.2 REFERENCES**

- A.** National Fire Protection Association (NFPA)
1. NFPA No. 70 - National Electrical Code

##### **1.3 SUBMITTALS**

- A.** Submit in accordance with Section 01300, except as modified herein.
- B.** Product Data/Catalog Cuts
1. Nameplates and labels.
  2. Wire and cable markers.
  3. Conduit markers.
- C.** Certificates of Compliance
1. Nameplates and labels.
  2. Wire and cable markers.
  3. Conduit markers.
- D.** Manufacturer's Instructions

1. Delivery, handling, transportation, storage and protection.
  2. Surface preparation, and application/installation of products.
  3. Application conditions and limitations of use.
- E.** Engraved nameplate schedule shall be submitted for review and approval by the Engineer.
- F.** Submittals required for painting work shall be as specified in Section 09900.
- 1.4 DELIVERY, HANDLING, TRANSPORTATION, STORAGE AND PROTECTION**

Delivery, handling, transportation, storage and protection shall be in accordance with the manufacturer's instructions, unless otherwise required by Division 1.

## **PART 2 - PRODUCTS**

### **2.1 GENERAL REQUIREMENTS**

- A.** Conform to requirements of NFPA No. 70.
- B.** Provide products listed and classified by Underwriters Laboratories, or a testing firm acceptable to authorities having jurisdiction as suitable for purpose specified and indicated.
1. The Contractor shall submit certificates of compliance for products provided.
  2. The Contractor shall provide the manufacturer's instructions indicating application conditions and limitations of use stipulated by the product testing agency.

### **2.2 NAMEPLATES AND LABELS FOR EQUIPMENT**

- A.** Nameplates and Labels
1. Engraved three-layer laminated plastic, black letters on white background.
- B.** Locations
1. Electrical equipment including, but not limited to, each electrical distribution enclosure and control equipment enclosure, communication cabinets, transfer switches and panels.
- C.** Letter Sizes:

1. Use 1/4-inch letters for identifying individual equipment and loads.
2. Use 1/4-inch letters for identifying grouped equipment and loads.
3. Use 1/8-inch letters for identifying voltage, phase, and neutral.

## **2.3 WIRE MARKERS**

**A.** Wire markers shall be manufactured by Panduit, Ideal, 3M, or approved equal.

1. Description: Cloth tape or tubing type wire markers.
2. Locations: Each conductor at panelboard, gutters, pull boxes, outlet and junction boxes and each load connection.

**B.** Legend

1. Power and lighting circuits: Branch circuit or feeder number indicated on the Drawings.
  - a. Control circuits: Control wire number indicated on schematic and interconnection diagrams on the Drawings.
2. Power supervisory control and data acquisition (SCADA) system circuits:
  - a. Circuits shown on the riser diagrams or schematic diagrams. The riser diagrams and schematic diagrams are shown on the Drawings.

## **2.4 CONDUIT MARKERS**

**A.** Conduit markers shall be manufactured by Banded Labeling System, Brady USA, Inc., Panduit, or approved equal.

**B.** Location: Furnish markers for each conduit longer than 6 feet.

**C.** Spacing

1. Spacing shall be 20 feet on center, unless otherwise specified.
  - a. Fire alarm conduits shall be marked every 10 feet.
  - b. 13.8 kV system shall be marked for its entire length.

**D.** Color:

<u>System Name</u>	<u>Color</u>
1. 480-volt system	Orange

2. 208 volt system	Blue
3. Fire alarm system	Red
4. Telephone system	Gray
5. 13.8 kV system	Yellow
6. Management information system	Purple
7. Passenger assistance system	Green
8. Public address system	White
9. Closed circuit television system	Black
10. Power SCADA	Pink

**E. Legend:**

<u>System Name</u>	<u>Legend</u>
1. 480 volt system	480 V
2. 208 volt system	208 V
3. Fire alarm system	FAS
4. Telephone system	TS
5. 13.8 kV system	13.8 kV
6. Management information system	MIS -
7. Passenger assistance system	PNRA
8. Public address system	PAS
9. Closed circuit television system	CCTV
10. Power SCADA	PSCADA

## **2.5 PAINTED CONDUIT IDENTIFICATION**

**A.** Conduit shall be painted for identification purposes. Paint system Identification Number shall be as specified Section 09900 - PAINTING

**B.** Paint colored band on each conduit longer than 6 feet.

**C.** Paint bands, 3 inches wide, 20 feet on center, unless otherwise specified.

1. Fire alarm conduits shall be painted every 10 feet.

2. 13.8 kV system shall be painted for its entire length.

**D.** Color

<u>System Name</u>	<u>Color</u>
1. 480-volt system	Orange
2. 208 volt system	Blue
3. Fire alarm system	Red
4. Telephone system	Gray
5. 13.8 kV system	Yellow
6. Management information system	Purple
7. Passenger assistance system	Green
8. Public address system	White
9. Closed circuit television system	Black
10. Power SCADA	Pink

## **2.6 UNDERGROUND WARNING TAPE**

- A.** Underground warning tape shall be manufactured by Panduit, Ideal, Seton, or approved equal.
- B.** Description: Underground warning tape shall be 6 inch wide plastic tape, colored yellow with suitable warning legend describing: CAUTION - BURIED ELECTRICAL LINES BELOW.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

Degrease and clean surfaces to receive nameplates, labels and markers, in accordance with the manufacturer's instructions.

### **3.2 APPLICATION INSTALLATION**

- A.** Application/installation of products shall be in accordance with the manufacturer's instructions.
- B.** Nameplates and Labels
  - 1. Install nameplates and labels parallel to equipment lines.
  - 2. Secure nameplate to equipment front using screws.
  - 3. Secure nameplate to inside surface of door on panelboard that is recessed in finished locations.
- C.** Conduit Identification by Markers
  - 1. Identify conduit using conduit markers.
    - a. Apply conduit markers parallel to conduit runs.
- D.** Conduit Identification by Painting
  - 1. Identify conduit, using paint. Paint shall be field applied.
    - a. Painting, including surface preparation, shall be in accordance with Section 09900 - PAINTING
- E.** Identify underground conduits using underground warning tape. Install one tape per trench at 12 inches below finished grade.

## **PART 4 - MEASUREMENT AND PAYMENT**

### **4.1 GENERAL**

No separate measurement or payment will be made for work required under this Section. All costs in connection therewith shall be considered incidental to the item or items of work to which they pertain.

**END OF SECTION**